

In the Written Description

The Applicant respectfully requests that the following amendments to the written description be entered under 37 C.F.R. §1.121(b)(1)(ii). The following replacement paragraphs are submitted with mark-to-show changes and the paragraph to be replaced are identified by page and line numbers.

Please replace the Abstract with the following paragraph:

A method for automatically detecting and tracking the contour of an image that uses a class of filters, obtained from the first order absolute central moment. The method provides the steps of filtering a starting image through the absolute central moment $e(n,m)$ of the intensity of a pixel of ~~said the~~ image, being n and m the coordinates of each pixel, where the absolute central moment is obtained with the following steps: determining for each n,m the local mean calculated in a neighborhood about a pixel of coordinates n,m of the starting image, thus obtaining a first filtered image; determining for each n,m the sum of the absolute differences between the intensity of a pixel of coordinates n,m of the first filtered image and the intensity of all the pixels contained in a neighborhood about a pixel of coordinates n,m of either ~~said the~~ starting image or a second filtered image obtained from ~~said the~~ starting image. ~~The images to treat can be of various type and belonging to many different fields, among which robotics, control of industrial processes, medicine, multimedia applications, safety systems, and can be color or grey levels images. The bidimensional images can give place to volumetric images or panoramic images if acquired as spatial sequences of slices.~~

Please replace page 1, lines 17-27 with the following paragraph:

In case of applications in medicine, i.e. in biomedical imaging, they refer normally to an organ and are obtained with various techniques such as ultrasonic pulses, PET, SPECT, CAT, MR, etc., which can be anatomical images, or images of function, obtained by means of time sequences of

anatomical views of a particular zone of the organ, or images of perfusion, obtained on the same organ after treatment of the patient with substances that highlight the perfusion in the organ. Or, the images can be graphs (~~as~~ex. ECG) acquired by a scanner, thus allowing to a paper graph to be converted into a digital signal.

Please replace page 3, lines 25-33 with the following paragraph:

Also in this case, the noise is approached using a step of thresholding, for example as in US5086219, adopting a threshold according to the ~~strength~~ strength of the zero crossing, i.e. to the slope of the curved point at the zero crossing; the reason is that, normally, to the discontinuity correspond more intense zero-crossings (i.e. zero crossings with much higher slopes) than those elsewhere typical of the noise, which in this way can be filtered.

Please replace page 5, lines 12-14 with the following paragraph:

– ~~Determining~~determining for each n,m the local mean calculated on a neighborhood about a pixel of coordinates n,m of the starting image, obtaining a first filtered image;

Please replace page 9, lines 15-17 with the following paragraph:

– ~~figure~~figures 7a to 7d ~~shows~~show a typical application of the procedure of local thresholding (~~7d~~), starting from the same images of figure 5(~~7a~~);

Please replace page 20, lines 1-4 with the following paragraph:

The convolutors, whose block diagram is shown in figure 10, have a certain number of elementary units. The operation carried out by each unit is a multiplication-and-sum, that is ~~over~~.

Please replace page 20, lines 15-23 with the following paragraph:

If 256 grey levels images are treated, elements 5 and 6 are implemented by means of 8 *bit* registers. Both multiplier 7 and adder 8 are

instead implemented using a combinatorial logic. The former has *8 bit* inputs and *16 bit* outputs, whereas the size of the latter depends on the size of the partial sum $s(k, l-1)$. ~~In~~ In some implementations, it can be advantageous to provide multiplier and adder on a single combinatorial network having three inputs and an output.